



YAMAHA Power User

ABOUT THE PLG BOARDS

The PLG-Modular Synthesis Plug-in System:

This innovative feature allows you to add hardware plug-in boards that can be either complete synthesizers or specialized effect processing, as in the case of the PLG100-VH.

The PLG 100-VH

The PLG100-VH provides a sophisticated vocal effect that takes a microphone input and reproduces up to 3 harmony parts. These parts can be voiced under MIDI control to make for intricate 4 part choruses - (3 + your voice) . This MIDI control can be real time (as you play) or controlled from a prerecorded MIDI track. It can also create effects where you control the pitch of a "synth voice" from your keyboard, and where you can transpose the pitch you are singing and can change the gender of the voice, as well. This is great, allowing you to talk, grunt or otherwise make noises into musical pitches or into wild robot-like sound effects.

Once it is connected, the PLG 100-VH becomes another effect block in the S80 and can be applied to one of the Parts within a PERFORMANCE. Although Harmony can be applied to normal instrument Parts, it is designed specifically to work with the A/D Input.

You can pre-program the pitch interval of the harmony, or you can play the harmony from the S80 keyboard and even have the harmony interval change, depending on the chord you play. As long as your own voice is in pitch and you play the appropriate chords, the PLG 100VH ensures that the harmony "voices" will be enharmonically correct and stay in pitch with the chord changes of the song.

It also includes a gender changer effect that turns a male voice into a female voice (or vice versa), and a vibrato effect that can add vibrato to your voice.

The VH EFFECT EDITOR

This is a special plug-in software module for the XGworks Lite v3.0 software, that comes included with your S80 (the YAMAHA Tools for S80 & CS6X/CS6R CD). It gives you

comprehensive control over all PLG 100-VH settings and parameters. It also provides exceptionally easy and intuitive editing, with graphic controls.

INSTALLATION

To install the PLG100-VH, follow the instructions in the S80 Owner's Manual (pages 148-150).

Using a Microphone & the A/D Input

Before we get started with the PLG 100-VH, it is necessary to understand how to use the A/D Input of the S80.

This guide will instruct you how to use the A/D input of the S80 with a microphone, in conjunction with the PLG 100-VH. You can sing into a microphone that is plugged into the S80 and apply effects to the vocals.

Before we get started, have a microphone plugged into the A/D Input of the S80.

The 4 Easy Steps To Using The A/D Input and the PLG 100-VH.

Each PERFORMANCE stores A/D input settings.

To start from the beginning you will need to "initialize" a PERFORMANCE. If you have a PERFORMANCE that you want to use, skip step 1.

1> Initialize A PERFORMANCE:

- Select the PERFORMANCE you wish to "Initialize".
- Push [JOB]. Select the Initialize job.
- Push [ENTER] and then push [INC/Yes]

2> Edit the PERFORMANCE and the A/D Input Settings:

- Press [EDIT]
- Press [EXT] (next to the [INT] bank button). Turn the PAGE knob fully counterclockwise. The display screen should show:

▼MIX	Template)	Src	Number
PART AD	audio	00[Off	]

3> Select the Source Input Level:

- Turn KN B counterclockwise to select "mic".
- Turn KN C to select "01-Mic"—THIS TURNS THE INPUT ON. Adjust the signal "gain" level by turning the small (GAIN) knob (located to the left of the A/D input jack).
- Turn KN C **or** use the [DEC/NO], [INC/YES] to select from these effect presets
[02-Reverb, 03-Chorus, 04-Cho + Rev]

These will be followed by settings 5-12, reading "InsEF Off".

4>Applying the PLG 100-VH:

- Hold the [SHIFT] button and turn the PAGE knob to select the **Com: EFF** parameter. The display screen should look like the one below while you hold [SHIFT] + PAGE. You will select the parameter shown here in bold.

Com: > GEN>QED>ARP>CTL>MEQ ▶ **EFF**
Part: > MIX>TON>LYR >RCV >MKB

The screen should then look like the one pictured below:

◆EFF  Part)	---- InsEF ----	PLG-EF
Common	Part 01	▶ PartAD

Alternatively, you can use the shortcut button [PRE1], then use the PAGE knob to scroll down to the EFF PART Common page.

- Turn KN 2 counterclockwise to select "PartAD" as the PLUG IN-EFFECT - if necessary.

While still in this mode, turn the PAGE knob three "clicks" so that the display reads the EFF Plg PLG100VH TYPE Page as below:

◆EFF  Plg)	PLG100-VH	Type [ENTER]
Common	▶ THRU	to Edit

This is where you select the Vocal Harmony type.

- Turn KN 1 to select one of the 4 PLG100-VH modes: (VOCODER, CHORDAL, DETUNE H, or CHROMAT).

For this example, let's select VOCODER.

What Are the Four Vocal Harmony Types?

VOCODER: This produces up to three **synth** voice harmony notes whose pitches correspond to the exact notes you play on the S80. In other words, you can sing the melody and "play" the harmony or harmonies from the keyboard (or from a sequencer track). The Harmony sound can be edited. The Lead voice can be synthesized, as well (Pitch Correct = ON). This is very useful when you want to Pitch Correct your voice, forcing the sound of your voice to the notes you play on the keyboard. You can edit this synth lead voice from 'almost' natural to robot-like to munchkin-like (Lead Gender Depth). You can use your mouth shape and the sound of your voice to create unusual and bizarre out-of-this-world vocal effects. Changing the gender of the Voice uses one of the harmony voices and reduces the number of synth voices to 2.

Chordal: This produces up to three harmony notes that correspond to the chords you play on the S80 (or chords recorded to a sequencer).

For example, if you play a C major triad on the keyboard and sing a 'C' note (and Chordal Mode is set to "trio"), the resulting harmonies will be 'C', 'E', and 'G'. Thirty-four different chord types are recognized in this mode - giving you an amazingly full and flexible palette of harmonies, suitable for nearly any music style. The number of harmonies produced and their position above or below the melody is set in the Mode parameter.

In general, the Chordal Type is best suited when you want to simply play the chords and have the Harmony effect automatically sort out the suitable notes.

DETUNE: This produces a slightly "detuned" pitch and mixes it with the input signal for a rich chorusing effect. The amount of the detuning is editable via the MODE parameter.

MIDI note data from a keyboard or sequencer has no effect in this mode.

CHROMATIC (CHROMAT.HM): This produces a harmony at a fixed pitch interval from the original sound (such as an octave, or a third). The amount of the pitch shift is set with the MODE parameter.

MIDI note data from the S80 or sequencer has no effect in this mode.

EXAMPLE 1

This first example will use the PLG 100-VH's VOCODER harmony type and the S80 A/D Input. To do this:

- Follow STEPS 1-4 of "4 Easy Steps To Using The A/D Input and the PLG 100-VH".

At this point, you should be able to:

- Hear audio through the microphone
- Play the S80 and hear a piano Voice.
- Sing into the microphone while playing a chord on the S80. The harmonies produced (up to three harmony notes) are pitches corresponding to the notes you play on the S80.

Now let's turn the piano Voice off so that we can concentrate on the Vocal Harmony board.

- Push Program button [1] to select PART 1 or use KN A, then turn the PAGE knob counterclockwise.
- Select the 'LYR Mode' page. Set the screen to look like the example below.

LYR  Mode)	Mode	Arp	Layer	RcvCh
Part 01	poly	on	▶ off	off

Turning "off" the piano Voice.

- Turn KN 1 to turn Layer "off".
- Turn KN 2 to turn RcvCh "off".

*At this point, you should **only** hear the original microphone signal and the harmonized parts (when you play the keyboard and sing into the microphone).

The next objective will be to alter the balance of the harmony signal so that no actual microphone signal is heard, just the VOCODER effect.

While still in EDIT mode:

- Hold the [SHIFT] button and turn the PAGE knob to select the **Com: EFF** parameter. The display screen should look like the one below. You will select the parameter in bold.

Com: > GEN>QED>ARP>CTL>MEQ ▶ EFF
Part: > MIX>TON>LYR >RCV >MKB

- Turn the PAGE knob to the EFF Plg PLG100-VH TYPE page.

The screen should then look like the one pictured below:

EFF  Plg)	PLG100-VH	Type	[ENTER]
Common	▶ VOCODER		to Edit

- We now need to "edit" the VOCODER settings. To do this push [ENTER].
- Turn the PAGE knob to the EFF Plg page with the Lower Gender Depth and the

Lead/Harmony balance. The screen should read as below.

EFF  Plg)	Lower G. Dpt.	Lead/Harm
PLG 100-VH	-20	▶ (L=H)

KN 2 adjusts the balance between the "lead" or microphone input signal and the PLG 100-VH's vocal harmonies.

- Turn KN 2 clockwise, adjusting the balance completely to the vocal harmony signal. The display should appear as the example below.

◆ EFF  Plg)	Lower G. Dpt.	Lead/Harm
PLG 100-VH	-20	▶ (L<H63)

*At this point, you should **only** hear the harmonized parts (when you play the keyboard **and** sing into the microphone).

Using the PLH 100-VH in this manner will allow you to actually play your vocal parts from the keyboard. The "synthesizer" harmony pitches will be completely determined by what is played on the keyboard of the S80. Controllers such as pitch bend can also be applied to the harmonized effect.

EXAMPLE 2-the "Classic" Vocoder setting

The next setting will give you the classic robot-like vocoder effect.

To do this:

- Follow STEPS 1-4 of "4 Easy Steps To Using The A/D Input and the PLG 100-VH".

At this point, you should be able to:

- Hear audio through the microphone
- Play the S80 and hear a piano Voice.
- Sing into the microphone while playing a chord on the S80. The harmonies produced (up to three harmony notes) are pitches corresponding to the notes you play on the S80.

Turn the piano Voice off so that we can concentrate on the Vocal Harmony board settings.

- Push Program button [1] to select PART 1 or use KN A.
- Turn the PAGE knob and select the LYR Mode page. Set the parameters as below

◆ LYR  Mode)	Mode	Arp	Layer	RcvCh
Part 01	poly	on	▶ off	off

Turning “off” the piano Voice.

- Turn KN 1 to turn Layer “off”.
- Turn KN 2 to turn RcvCh “off”.

*At this point, you should **only** hear the original microphone signal and the harmonized parts (when you play the keyboard **and** sing into the microphone). If not, check the Lead/Harmony balance (L=H).

The next objective will be to:

- Adjust the settings of the PLG 100-VH to put the finishing touches on the robot-like voice effect.
- Alter the balance of the Lead/Harmony signal so that no actual microphone signal is heard, just the VOCODER effect.

While still in EDIT mode:

- Hold the [SHIFT] button and turn the PAGE knob to select the **Com: EFF** parameter. The display screen should look like the one below. You will select the parameter in bold.

Com: > GEN>QED>ARP>CTL>MEQ ▶ EFF
Part: > MIX>TON>LYR >RCV >MKB

Turn the PAGE knob to the EFF Plg: Common page. The screen should then look like the one pictured below:

◆EFF  Plg)	PLG100-VH	Type	[ENTER]
Common	▶ VOCODER	to Edit	

- We now need to “edit” the VOCODER settings. To do this push [ENTER].
- Turn the PAGE knob to the ‘EFF Plg PLG MODE’ page. Set the screen as below:

EFF  Plg)	Mode	H.Gendr. Typ
PLG 100-VH	▶ -1 oct	auto

- Turn KN C and set Mode to “-1 oct trans”.
- Turn KN 2 and set Harmony Gender Type to “Auto”.
- Turn the PAGE knob to the ‘EFF Plg Lead Gender’ page.

Turn KN C and set Lead Gender Type to “male”. The screen should read as below.

EFF  Plg)	L.Gendr. Typ	L.Gendr. Dpt
PLG 100-VH	▶ male	+00

- Turn the PAGE knob to the ‘Pitch Correct / Upper Threshold’ page.

EFF  Plg)	PchCorrect	UpperThrsh
PLG 100-VH	▶ on	05

- Turn KN C to turn Pitch Correct to “on”.
- Turn KN 2, set Upper Threshold to “5”.
- Turn the PAGE knob to the ‘Lower Threshold / Upper Gender Depth’ page.

EFF  Plg)	Lower Thrsh	Upper G. Dpt.
Common	▶ 6	+00

- Turn KN C to set Lower Thrsh to “6”.
- Turn KN 2 to set Upper Gender Depth to “+00”.
- Turn the PAGE knob to the ‘Lower Gender Depth / Lead-Harmony’ page.

KN 2 adjusts the balance between the “lead” and “harmony” voices of the PLG 100-VH.

- Turn KN 2 counterclockwise, adjusting the balance completely to the “lead” signal. The display should appear as the example below.

EFF  Plg)	Lower G. Dpt.	Lead/Harm
Common	-20	▶ L63>H

*The idea of this setting is to get a monotone, robotic sounding effect.

At this point you are ready to determine what pitch the PLG board will drive by simply playing a key on the S80.

Keep in mind, how you shape your words, what register of your voices and volume that you speak or sing into the microphone, all determine the results of the synthesized voice(s). This allows endless and unique performance possibilities.

The “harmonized” result can also have signal processing applied to it.

For information on this topic, see the section mentioned later in this article called “APPLYING EFFECTS TO THE PLG 100-VH”.

EXAMPLE 3

This next example will use the PLG 100-VH's CHORDAL harmony type.

To do this:

- Follow STEPS 1-4 of “4 Easy Steps To Using The A/D Input and the PLG 100-VH” and select CHORDAL in “Step 4”.

At this point, you should be able to:

- Hear audio using the microphone

- Play the S80 and hear a piano Voice.
- Sing into the microphone while playing the S80 and hear an automatically harmonized vocal part.

In general, the Chordal Type will allow you to simply play the chords and have the Harmony effect - automatically sort out the suitable notes.

The same method can be applied for using DETUNE and CHROMATIC types. Simply follow Easy Steps 1 through 4, selecting the Harmonization Type in the 4th step.

Additional settings can be altered within all of the Harmony Types to change the type of voicing of the harmonization, gender type of the harmonies, and detuning, transposition and pitch correction parameters.

APPLYING EFFECTS TO THE PLG 100-VH

After selecting the desired Vocal Harmony effect, you may want to “dress up” that signal with a signal processor, like reverb, chorus, delay, or a combination of effects.

The COMMON effects like Reverb and Chorus, for instance, can be added to the Vocal Harmony parts. To do this:

- Complete **Example 1**.
- While still in EDIT Mode, press [EXT] (next to the [INT] bank button).
- Turn the PAGE knob to MIX Level (2nd page), pictured below.

MIX Level)	Vol	Pan	RevSend	ChoSend
PartAD	100	C	0	0

- Adjust the level of the Reverb Send using KN 1. Adjust the level of the Chorus Send using KN 2.

After you have selected your effect choices for the A/D Input you must name and save the PERFORMANCE to retain these changes. (See page 112 & 113 in the S80 Owner's Manual).

Backup your data in an ALL Data file to an optional SmartMedia Card. Performance data can only be stored in the ALL data type file (.s2a).

For more details using the A/D Input, see the S80 Power User entitled USING THE A/D/ INPUT.

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